



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,682	08/19/2003	Hyung-Jin Kim	P23708	2710
7055	7590	04/04/2006	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C.			BELT, SAMUEL E	
1950 ROLAND CLARKE PLACE			ART UNIT	
RESTON, VA 20191			PAPER NUMBER	
			3746	

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/642,682

Applicant(s)

KIM ET AL.

Examiner

Samuel E. Belt

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP Publication (52-23707) in view of Park (US Patent 5,451,727).

In regards to claims 1-10, & 12-19 JP Publication (52-23707) sets forth a reciprocating compressor comprising: A case having a gas suction pipe and a gas discharge pipe (Figure 1, item 1); a frame unit positioned in the case (Figure 1, item 8); a cylinder positioned at the frame unit and having a plurality of slots formed in a longitudinal direction on an outer circumferential surface (Figure 1, item 7); a piston coupled with a reciprocating motor so as to linearly and reciprocally move into the cylinder and having a plurality of through holes formed at an outer side, said through holes communicating with the slots (Figure 1, item 23); a gas muffler member positioned at an outer circumferential surface of the cylinder (Figure 1, item 11); Through holes configured to remain within a range of the slots while the piston moves linearly and reciprocally (Figure 1, item 27); The direction of gas flowing through the slots and the through holes is transverse to the direction of the piston movement (not

numbered; however, clearly seen in figure 1); An echo space formed inside the gas muffler member (not numbered; however, clearly seen in figure 1); The gas introduced into the echo space of the gas suction member through the gas suction pipe is introduced into the suction passage of the piston after passing through the slots and the through holes (not numbered; however, clearly seen in figure 1); a gas muffler member including an inner housing and an outer housing coupled to the inner housing (not numbered; however, clearly seen in figure 1); the gas muffler member communicates with the slots at one side thereof (not numbered; however, clearly seen in figure 1); the gas muffler member communicates with the gas suction pipe (not numbered; however, clearly seen in figure 1).

The JP Publication (52-23707) device differs from the claimed invention in that there is no explicit teaching of the gas muffler member being an additional member.

Park teaches a compressor having a separate gas suction muffler member (Fig. 4, item 32), which serves as a noise suppressor for the compressor.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the JP Publication (52-23707) device by using the separate gas suction muffler as taught by Park to allow for easier replacement of the muffler.

In addition as shown in *Nerwin v. Erlichman* 168 USPQ 177 (1969) to make separable would have been considered an obvious improvement. The obvious improvement would provide the capability to replace just the muffler if it were faulty, as opposed to replacing the whole assembly.

In regards to claims 6 & 16 JP Publication (52-23707) disclose the aspects of the claimed apparatus as explained above, but fail to teach the a plurality of spring receiving grooves that are formed at an outer side of the gas muffler member.

Park teaches a compressor having a plurality of spring receiving grooves, which are formed at an outer side of the gas muffler (Fig. 5, **See Note**).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the JP Publication (52-23707) device by using the plurality of receiving grooves as taught by Park to eliminate transmission of any excessive vibration between parts, thus extending the life of the compressor parts.

(**Note:** Examiner is interpreting each revolution as being a groove.)

In regards to claims 11 & 20 JP Publication (52-23707) disclose the aspects of the claimed apparatus as explained above, but fail to teach the gas muffler member being directly connected with the gas suction pipe nor the gas suction pipe being provided near the through holes without passing the way of the reciprocating motor.

Park teaches a compressor having a gas suction muffler member connected directly to the gas suction pipe (Fig. 4, items 32 & 34), which would also put the gas suction pipe near the through holes allowing the suction gas to bypass the reciprocating motor.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the JP Publication (52-23707) device by using the separate gas suction muffler directly connected to the suction pipe as taught by Park to

Art Unit: 3746

eliminate any excessive connection parts between the two, thus lowering the cost for compressor.

Response to Amendments

In view of the applicant's amendments, the objection to the drawings is hereby withdrawn.

Applicant's arguments with respect to claims 1-20 have been fully considered but they are deemed moot in view of the new grounds of rejection.

Since new grounds of rejection have been made, this office action is being made non-final to afford the applicant the opportunity to respond to the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel E. Belt whose telephone number is (571) 272-7820. The examiner can normally be reached on M-F, 8 - 4:30EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on (571) 272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEB


TAE JUN KIM
PRIMARY EXAMINER


Samuel E. Belt
03/24/06